

**ABSTRACT OF THE DISCLOSURE**

Disclosed is a system for drawing an optical fiber for controlling polarization mode dispersion. A furnace is provided for uniformly heating an optical fiber preform in the drawing system mounted to an optical fiber draw tower. The furnace comprises: (a) a main body; (b) a sub-body placed coaxially with the main body and having a diameter smaller than that of the main body; and (c) an upper gas feeding section over the main body, wherein the upper gas feeding section includes a first hollow rotary body having at least one slit in the inner surface thereof along the longitudinal direction of an optical fiber and at least one opening extended in the direction of the center, whereby a gas artificially/periodically creates non-contact polarization to the optical fiber by the first hollow rotary body. Effective non-contact control can be carried out about polarization mode dispersion of the optical fiber.